

Table 1

	ICP						etch rate (Å/min)						selection ratio	
	Bias		Press		SF ₆		CF ₄		BCl ₃		Cl ₂		O ₂	
	W	Pa	W	Pa	scm	scm	scm	scm	scm	scm	scm	scm	scm	scm
condition 1	700	4	2.0	24							12	24		

	W		TaN		SiO ₂		selection ratio	
	AVE	p.n.u	AVE	p.n.u	AVE	p.n.u	AVE	p.n.u
	4822	8.2%	1015	8.0%	301	7.5%	4.77	14.6%

	Ti		TaN		SiO ₂		Ti/TaN	
	AVE	p.n.u	AVE	p.n.u	AVE	p.n.u	AVE	p.n.u
	129	49.8%	835	50.8%	41	27.4%	0.16	64.5%
condition 2	490	79.3%	1087	66.3%	37	41.0%	0.47	89.2%
condition 3	(9600)	※1	2755	9.0%	225	7.7%	(3.89)	-
condition 4	(12000)	※2	775	26.0%	224	9.5%	(20.58)	-
condition 5	545	69.9%	257	52.6%	230	9.7%	2.08	49.2%
condition 6	6566	8.6%	251	120.7%	64	10.9%	38.25	92.0%
condition 7	3534	16.6%	220	67.5%	123	10.0%	25.03	145.1%
condition 8	4903	79.2%	161	65.8%	10	126.3%	63.82	180.7%
condition 9	7315	11.8%	211	47.6%	90	11.7%	37.57	50.8%

	W		TaN		SiO ₂		selection ratio	
	AVE	p.n.u	AVE	p.n.u	AVE	p.n.u	AVE	p.n.u
	5082	7.2%	102	30.4%	64	10.9%	50.91	27.3%
condition 7 (again)	5929	6.3%	125	25.5%	56	15.9%	48.71	30.5%

confirmation of reproducibility

	W		TaN		SiO ₂		selection ratio	
	AVE	p.n.u	AVE	p.n.u	AVE	p.n.u	AVE	p.n.u
condition 7	500	10	1.9		65	10	8.5	
condition 11	500	10	1.9		60	15	8.5	

※1 no step at the stage of etching for 15 seconds (=not etched)
no deposited metal 8000 Å left at the stage of etching for 50 seconds
※2 no deposited metal 8000 Å left at the stage of etching for 40 seconds